REMARKS/ARGUMENTS

This Amendment is being filed in response to the Office Action dated April 27, 2006. Reconsideration and allowance of the application in view of the remarks to follow are respectfully requested.

Claims 1-4 6-11, 13, and 14 are currently pending in the Application. Claims 1, 10, 12 and 13 are independent claims.

In the Office Action, Claims 1-4, 6-11 and 13-14 are rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Clunie, entitled, "DICOM Structured Reporting", pages 7-13, 31, 237, 306-314 and 325-344 (Cluniel) in view of U.S. Patent Publication No. 2002/0049790 to Ricker ("Ricker").

Cluniel has been discussed in numerous previous responses and as such, will not be further discussed herein other than to point out that "Cluniel does not explicitly disclose the mapping is independent of the XML DTD." (See, Office Action, page 4, lines 7-8.)

Ricker is cited in the Office Action for showing this feature (See, Office Action, page 4, lines 9-13).

Ricker has a filing date of July 2, 2001 and as such does not directly qualify as prior art since the present patent application

has a filing date of March 27, 2001. However, Ricker claims priority to U.S. Provisional Patent Application No. 60/223,859 which was filed on August 8, 2000. If not for that date, Ricker is not prior art since only that date precedes Applicants' filing date.

Under MPEP §706.02 heading, "DETERMINING THE EFFECTIVE FILING DATE OF THE APPLICATION" it states that (emphasis added) "the effective filing date of a U.S. application may be determined as ... (D) [i]f the application properly claims benefit under 35 U.S.C. 119(e) to a provisional application, the effective filing date is the filing date of the provisional application for any claims which are fully supported under the first paragraph of 35 U.S.C. 112 by the provisional application." Accordingly, only subject matter in Ricker that is supported by the subject matter of U.S. Provisional Patent Application No. 60/223,859 qualifies as prior art. An excerpt of Ricker's U.S. Provisional Patent Application No. 60/223,859 from Public PAIR is attached hereto in an Appendix that follows this amendment for the Examiner's consideration.

Ricker is cited for showing "wherein the mapping of each DICOM attribute into a corresponding XML element is independent of the

XML document-type-definition of the XML document" as substantially required by each of Claims 1 and 8. The Office Action asserts that the "data dictionary" of Ricker is such an independent mapping. This position is respectfully refuted. It is the Applicants' position that the data dictionary of Ricker is in fact the same as a document-type-definition of the XML document.

In support of this position, the Examiner's attention is called to Ricker's U.S. Provisional Patent Application No. 60/223,859, page 5, under a section entitled "DTDs versus data dictionaries" wherein it is stated that (emphasis added) "[d]ata dictionaries are a direct equivalent to DTDs." Accordingly, Ricker in fact describes a mapping of the EDI elements to an XML document utilizing XML document-type-definitions, therein termed data dictionaries. Accordingly, the mapping of Ricker is not independent of the XML document-type-definitions of the XML document as substantially required by claims 1 and 8. As a minimum, the interpretation that the data dictionary is not a DTD is not entitled to the priority date of the provisional application and therefore is not prior art.

Accordingly, it is respectfully submitted that Cluniel in view of Ricker does not disclose or suggest (illustrative emphasis

added) "mapping each DICOM attribute of a plurality of DICOM attributes in the DICOM-SR document into a corresponding XML element of a plurality of XML elements, and outputting each XML element of the plurality of XML elements to the XML document, in a format that conforms to an XML document-type-definition of the XML document, wherein the mapping of each DICOM attribute into a corresponding XML element is independent of the XML document-type-definition of the XML document" as required by Claim 1 and as substantially required by Claim 8.

Based on the foregoing, the Applicants respectfully submit that independent Claims 1 and 8 are patentable over Cluniel in view of Ricker and notice to this effect is earnestly solicited. Claims 2-4, 6, 7, 9-11, 13 and 14 respectively depend from one of Claims 1 and 8 and accordingly are allowable for at least this reason as well as for the separately patentable elements contained in each of said claims. Accordingly, separate consideration of each of the dependent claims is respectfully requested.

In addition, Applicants deny any statement, position or averment of the Examiner that is not specifically addressed by the foregoing argument and response. Any rejections and/or points of argument not addressed would appear to be moot in view of the

presented remarks. However, the Applicants reserve the right to submit further arguments in support of the above stated position, should that become necessary. No arguments are waived and none of the Examiner's statements are conceded.

Applicant has made a diligent and sincere effort to place this application in condition for immediate allowance and notice to this effect is earnestly solicited.

Respectfully submitted,

By _____

Gregory L. Thorne, Reg. 39,398
Attorney for Applicant(s)
June 21, 2006

Enclosure: Appendix including except from Public PAIR of Ricker's U.S. Provisional Patent Application No. 60/223,859

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APPENDIX

Please type a plus sign (+) inside this box → [+]

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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53 (c).

INVENTOR(S)

Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
Jeffrey	Ricker	Alexandria, Virginia
Tom	Warner	St. Louis, Missouri

[ ] Additional inventors are being named on the ___ separately numbered sheets attached hereto.

TITLE OF THE INVENTION (280 characters max)

DATA TRANSLATION SYSTEMS AND MATERIALS

CORRESPONDENCE ADDRESS

Direct all correspondence to:
[X] Customer Number [22204] → [Place Customer Number Bar Code Label here]
OR

[X] Firm or Individual Name: NIXON PEABODY LLP

Address: 8180 Greensboro Drive, Suite 800

City: McLean State: Virginia ZIP: 22102

Country: USA Telephone: (703) 790-9110 FAX: (703) 883-0370

ENCLOSED APPLICATION PARTS (check all that apply)

[x] Specification	Number of Pages [68]	[ ] Small Entity Statement
[x] Drawings	Number of Sheets [31]	[x] Other (specify): two floppy disks

METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT (check one)

[X] A check or money order is enclosed to cover the filing fees
FILING FEE AMOUNT $ 150.00

[X] The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number 19-2380

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.
[X] No.
[ ] Yes, the name of the U.S. Government agency and the Government contract number are: _____

Respectfully submitted,

SIGNATURE _____ Date August 8, 2000

TYPED or PRINTED NAME JASON H. VICK REGISTRATION NO. 45,285

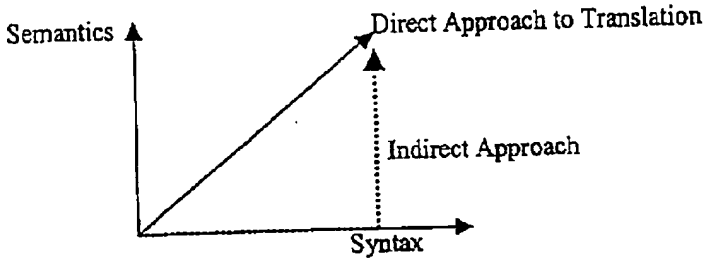
TELEPHONE (703) 790-9110 Docket No. 099307-000505

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, D.C. 20231.

Methods and Systems for Data Translation

This invention generally relates to data translation. In particular, this invention relates to data translation from a particular format to, for example, XML, an eXtensibleMarkup Language.



A direct approach to translation translates semantics and syntax in the same manner. However, for many database structures, the semantics are not equivalent to the metadata. For example, the hierarchy for an exemplary data structure is:

<metamodel> Records, Fields
<metadata> FirstName, LastName, Ext.
<data> Steve, Jackson, 123

Thus, in the direct approach, the human readable metadata is translated into tag names. Thus, the direct approach produces a translation that is US-centric, invents a new semantic, which is determined manually and is arbitrary, and has limited, if any, machine readability.

As a general background, for EDI, the Metamodel can be, for example, defined as:

EDI Metamodel
- Transaction Sets
- Segments
- Elements
- Value/ Code

For XML, the Metamodel can be, for example, defined as:

XML Metamodel
- Elements
- Attributes
- Comments
- Processing Instructions

Through the use of a two step approach, syntax and semantics can be translated differently. Specifically, with the indirect approach, the tag names represent the metamodel, i.e., the structure of the document, not the metadata. Therefore, the machine readable metadata and data are kept as attributes, and the human readable metadata and data become child elements.

The two steps, which can be performed in any order, comprise, establishing a mapping, for example a 1:1 correlation, of existing semantics into a XML syntax, and translating the semantics, while maintaining the syntax as XML.

In operation, the metadata about the particular data to undergo translation is known. Additionally, the metamodel relating to the particular data to undergo translation is known. The data is forwarded to a parser that performs a syntax translation of the data.

The parser's translation of the data is based on a XML data dictionary. The XML data dictionary, taking into account the characteristics of the metamodel and the metadata , are determined by the parser'. Thus, the parser' outputs a data dictionary that is in XML format.

This results in a translation of the original data that overcomes the deficiencies noted above in relation to a direct translation approach.

Attached hereto is an exemplary translation from an EDI document to XML. For the Office's convenience, the entirety of these files have been included in zipped format on the attached 2 floppy disks.

Specifically, the disks contain:

Disk 1	
850.edi	- original EDI data
850.xml	- translated XML output file
elements.zip	- element set of XML Data Dictionary
transactions.zip	- transaction set of XML Data Dictionary
Disk 2	
Data Dictionary Description	- XML Data Dictionary
Segments.zip	- segment set of XML Data Dictionary

The Indirect Approach

Jeffrey Ricker, XMLSolutions Corporation

The direct approach

Many organizations are attempting to transition existing or *legacy* data representations into XML. For any of these efforts there is a very direct approach: make the human readable metadata the tags of the markup. Using the direct approach, a purchase order number might appear as follows:

```
<purchaseOrderNumber>XX-1234</purchaseOrderNumber>
```

There are several disadvantages to the direct approach.

The direct approach is US centric

The phrase *purchase order number* is the *English* version of the human readable metadata. By making this the markup tag, we enforce a US-centric approach.

The direct approach invents a new semantic

Even if English-centric is acceptable, there is still usually more than one way to represent any given human readable metadata. For instance, *purchase order number* could appear as any of the following:

```
PurchaseOrderNumber
Purchase-order-number
Purchase_order_number
PONum
PONumber
PO_Number
PON
OrderNumber
PurOrdNum
```

A human can quickly infer that these tag names all mean the same thing, but a computer is not so competent. Those using the direct approach must make decision on which exact series of characters they will use to represent *purchase order number*. In so doing, they are specifying a new semantic. It becomes an arbitrary and manual process.

On must create this new semantic manually, which is why every EDI-XML effort employing the direct approach has taken months to generate just a handful of transaction sets. The method of deciding the semantics is arbitrary, which is why every EDI-XML effort using the direct approach is incompatible with the others.

The direct approach looses machine-readability

The indirect approach

The indirect approach makes the metamodel the tags of the markup. The human readable metadata is made a child element and the machine-readable metadata is made an attribute. In the indirect approach, a purchase order number might appear as follows:

```
<element code="324">
  <name>Purchase Order Number</name>
  <value>XX-1234</value>
  </element>
```

Data access

The key to any approach is data accessibility. XML data is accessed through a path. A path is a string representing a point on a tree. To access an element in either the direct approach or the indirect approach, one uses a string.

Direct approach	Indirect approach
<lastName>Ricker</lastName>	<field code="LN"> <name>Last name</name> <value>Ricker</value> </field>
//lastName	//field[@code='LN']/value

Image that I put hyphens or underscores instead of spaces in the tags of the indirect approach. Then my tags would each have a unique name just like the direct approach.

```
<field_code_LN/>  <field code="LN"/>
```

Transformations

To transform from the direct approach to the indirect approach:

```
<template match="lastName">
  <element name="field">
    <attribute name="code">LN</attribute>
    <element name="name">Last name</element>
    <element name="value"><value-of/></element>
    </element>
  </template>
```

To transform from the indirect approach to the direct approach:

```
<template match="field[@code='LN']">
  <element name="lastName">
    <value-of select="value"/>
    </element>
  </template>
```

In both cases, the code follows the same meta-model.

```
<template match="[pattern]">[prefix]<value-of/>[suffix]</template>
```

DTDs versus data dictionaries

Data dictionaries are a direct equivalent to DTDs.